REMARKS

Claims 1-7 are in this application. Claims 8-12 have been cancelled. Applicants preserve all rights to file one or more divisional applications directed to the subject matter of claims 8-12.

Part (b) of claim 1 has been amended to change "hydrogenation of" to - - hydrogenating- -; to insert - - obtained in step (a) - - after "the solution"; and to insert a - - ; - - after the catalyst ammonium formate.

Claim 7 has been amended to change "such as" to - - selected from the group consisting - -.

Therefore, it is respectfully requested that the objection to claim 1 and the rejection of claim 7 be withdrawn.

The Examiner has rejected claims 1-7 under 35 USC 103(a) as being obvious over Devgan and Bokadia (Aust. J. Chem., 1968, 21, 3001-3003). Applicants respectfully traverse this rejection.

The Devgan & Bokadia article (hereinafter Devgan, et al.) discloses a process for obtaining dihydro γ - asarone from *Acorus calamus* without any toxicity problem. See last line on page 3001 of Devgan ("We propose to name this compound [2,4,5-trimethoxyallylbenzene] as γ-asarone".) The use of *A. calamus* is known for several years in the art. However, recent phytochemical investigations show that more than 113 compounds are present in *Acorus calamus* [Mazza, G.G. of *Chromatography,* 328:179-206 (1985)] in which β-asarone is found to be toxic [Kellet, K., Odenthal, K.P., and Leng, P.E., *Planta Medica,* 1:6-9 (1985); Abel, G., *Planta Medica,* 53(3):251-253 (1987); Kim, S.C., Liem, A., Stewart, B.C., Miller, J.A., *J.A. Carcinogensis,* 20(7), 1303-1307 (1999)].

As a result, the use of this well known medicinal plant is now internationally prohibited in the flavor, perfumery and human food industries [Haborne, J.B., and Baxter, H., *Phytochemical Dictionary: A Handbook of Bioactive Compounds from Plants,* Taylor & Francis Ltd., Washington D.C., 474, (1993); McGuffin, M., *Americal Herbal Products Association's Botanical Safety Handbook,* CRC Press In., Boca Raton, FL, USA, 231 (1997)].

The instant invention attempts to reduce the toxicity of β-asarone by utilizing its side double bond. While α- and γ- asarones are known to non-toxic, and α-asarone is also known to possess hypolipidemic and antiplatelet activity, separation of individual asarones (α-, β- and γ-asarones) from calamus oil is a time consuming, tedious and expensive process. The Devgan et al. article focuses on the conversion of the γ-asarone to dihydroasarone (hydrogenation of γ asarone gave a dihydro derivative - page 3002, line 3 and page 3003 of Devgan). This is not the aim or the intent of the instant invention.

The instant invention attempts to hydrogenate crude calamus oil or β-asarone to obtain asarone free calamus oil which is rich in dihydroasarone (1-propyl-2,4,5-trimethoxybenzene) or pure 1-propyl-2,4,5-trimethoxybenzene.

Devgan, et al do not disclose the reduction of the carbon-carbon double bond of γ-asarone by direct catalysis in order to reduce toxicity. There is no disclosure in Devgan suggesting the present invention. Devgan discloses that U.V. and i.r. spectra of the dihydro derivatives of γ-asarone and β-asarone are the same but does not disclose or suggest that hydrogenation of crude calamus oil or β-asarone in the presence of a catalyst will result in 1-propyl-2,4,5-trimethoxybenzene.

The Examiner makes the statement that "the skilled artisan would have expected the isomeric starting materials to react similarly." The Examiner has not provided any support for this statement. The Examiner has not provided any support that geometric isomers will react similarly. It is noted that in the case that the Examiner relies on In re-Durden 226 USPQ 2d 359 (Fed Cir. 1985) the differences in structure between Durden's compound and Punja's compound were a difference in the number of ring atoms and the position of the carbonyl group and that "the instant and the prior art processes do not take place on ring atoms or atoms directly attached to ring atoms." In the present situation, the reaction takes place at a part of the molecule which differs between γ and β asarone and there is no disclosure that 1-Propyl-2,4,5-trimethoxybenzen can be prepared from crude calamus oil or β-asarone.

Therefore, since the claimed invention is not obvious over the cited reference it is respectfully requested that this rejection be withdrawn.

Applicants submit that the present application is in condition for allowance and favorable consideration is respectfully requested.

Respectfully submitted,

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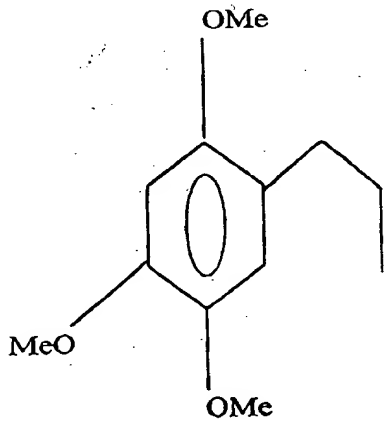
In the Claims

Claim 1 (Amended). A process for the preparation of 1-Propyl-2,4,5-trimethoxybenzene of the formula I useful as [a] an aroma molecule and as a starting material and intermediate for preparation of various drugs,



the [said] process comprising the steps of

(a) providing crude calamus oil or β-asarone in a solvent selected from the group consisting of ethanol, methanol, THF, DCM, toluene and chloroform;

(b) [hydrogenation of] hydrogenating the solution obtained in step (a) in the presence of a catalyst selected from the group consisting of PD/C, Pt, $Pd(OH)_2$, Raney nickel and ammonium formate; at a pressure in the range of 10-40 psi hydrogen gas and at a temperature in the range of 15-40°C;

(c) filtering the catalyst and removing the solvent under reduced pressure in the range of 10-100 mm Hg; and

(d) subjecting the reduced calamus oil to column of silica gel chromatography using an eluent to obtain the desired product in liquid form with 85-97% purity.

Claim 7 (Amended). A process as claimed in claim 1 wherein the calamus oil is extracted from the asarone rich plants [such as] selected from the group consisting of *Asarum europaeum, Crowea angustifolia* and

Heterotropa yakusimensis.